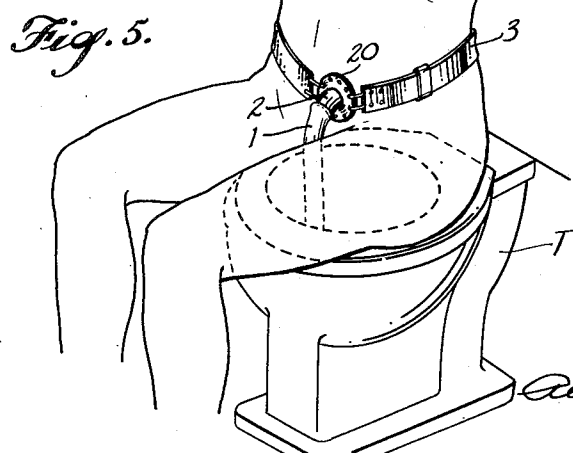
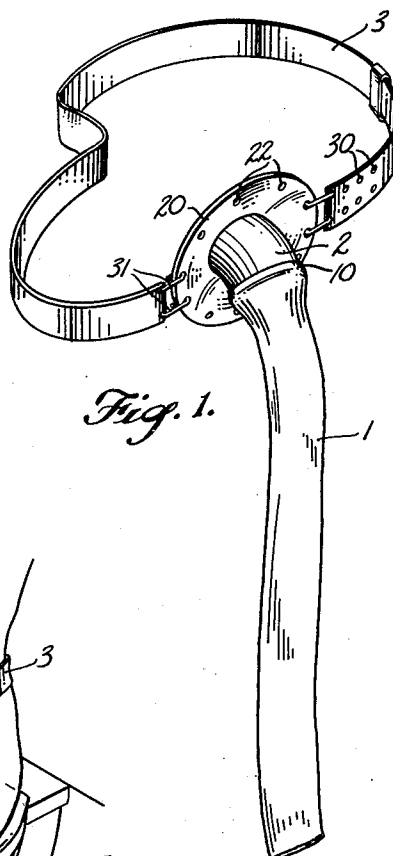
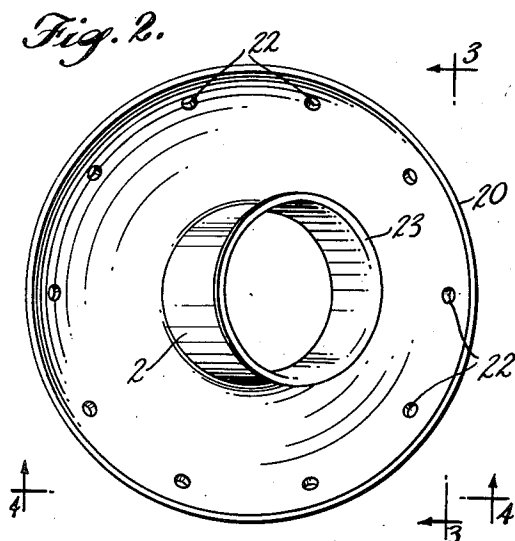
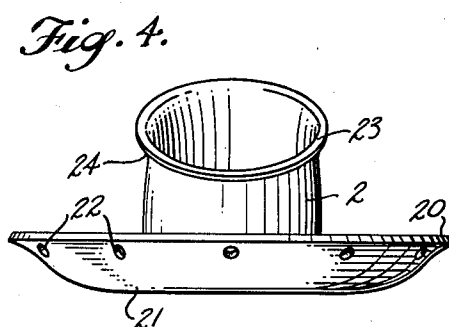
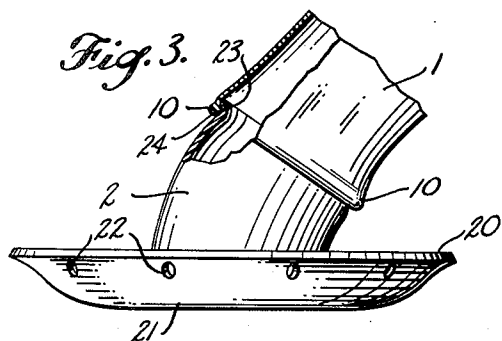


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ELIMINATION APPARATUS

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ELIMINATION APPARATUS

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The present apparatus is worn by a person having an artificial abdominal opening from the colon resulting from a colostomy, and serves to dispose of excrement eliminated from the body through such opening.

The principal object of such apparatus is to enable it to be applied easily and securely to the person's body, so that it will be held accurately in registry with the artificial colon opening, and will convey fecal matter from such opening to a receptacle, preferably a toilet, through a completely closed duct, so that such matter may be disposed of without any rehandling.

A further important object is to provide such apparatus of simple construction, which can be applied and manipulated very easily by the patient himself, so that he needs no assistance in applying the apparatus, using it, removing it, or cleaning it ready for re-use.

Such apparatus is further capable of adjustment for most effective use when the patient is in different attitudes, such as when seated or reclining, and is effective for use when the patient is resting comfortably in either of such positions.

Another advantage of the apparatus is that its construction is simple, rendering it easy and inexpensive to manufacture, while being light and compact, and can be cleaned easily and quickly after use.

For accomplishing these various objects the apparatus includes a rigid fitting composed of a short curved tube having at one end a convex body-engaging flange, and such tube being connectable to one end of a flexible tube, the other open end of which may discharge into a suitable disposal receptacle, such as a toilet. A supporting belt is engageable with the flange to hold the curved rigid tube in registry with the body aperture and in such rotative position that the tube will curve downward from the body.

Further objects and advantages of the apparatus, a preferred form of which is shown in the drawings, will be pointed out in the following detailed description.

Figure 1 is a perspective view of the assembled apparatus.

Figure 2 is a front view of the flexible tube mounting element or fitting, Figure 3 is an edge view of such mounting viewed in the direction of line 3—3 of Figure 2, showing a fragment of the flexible tube attached and with parts broken away, and Figure 4 is an edge view of such mounting taken at 90 degrees to Figure 3 viewed from the line 4—4 of Figure 2.

Figure 5 is a perspective view illustrating the apparatus as it would be used typically.

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It has been the usual practice heretofore to dispose of excrement eliminated from an artificial colon body opening by catching it as well as possible in a kidney-shaped pan, and then dumping the pan. The difficulty has been that in elimination from such an artificial body opening an enema normally is given prior to the elimination, and such an artificial opening has no muscular control to constrict the opening. As a result the excrement flows in uncontrolled fashion from the opening, and is inclined to run and splash in an objectionable manner.

As an alternative to catching the excrement in a pan it has been proposed to provide apparatus for collecting it in a bag, but the apparatus proposed for that purpose has been cumbersome and unsanitary, and the problem of dumping or otherwise disposing of the bag has been difficult.

The present apparatus has no collecting element, such as a pan or a bag, which need be supported by the user, but relies for disposal of the excrement on conveying means, such as the flexible rubber tube 1. The excrement from the opening flows unobstructedly through this tube into a conventional disposal receptacle, such as the toilet T shown in Figure 5, into the bowl of which the lower end of the tube 1 projects as the patient sits on the toilet in the usual manner. Alternatively, if the patient is bedfast, the free end of the tube may extend into a bedpan preferably set on a support alongside the patient's bed which is somewhat lower than the patient.

The tube 1 is of suitable light, flexible material of sanitary character which can be cleaned readily, such as thin rubber or plastic. This tube hangs from a rigid tube 2 of a body-engaging mounting or fitting. The main function of the short tube is to provide an unrestricted duct between the artificial colon body opening to a portion of the hanging flexible tube 1 extending generally parallel to the plane of the artificial body opening.

Integral with the end of tube 2 next to the body is a flange 20 of substantially circular shape, and a surface of which opposite the tube 2 is convex. Such convexity of the flange 20 forms a broad ridge portion of annular shape capable of pressing firmly against the body at a location immediately encircling the artificial colon aperture, and a skirt portion outwardly of such ridge portion which will be spaced a substantial distance from the person's body when the appliance is in use because of such flange convexity. Light pressure of this ridge against the body will produce an effective seal between the body and fitting to prevent escape of any excrement between the flange

20 and the body, and to confine the flow of excrement through the tube 2.

Pressure of the ridge 21 against the body may be accomplished manually or automatically in various ways, but preferably the supporting means for the mounting will effect such pressure. The mounting may be supported by a simple belt 3 carrying at each end suitable means for securing such ends to the edge portion of the mounting flange 20. By connecting the belt ends to or engaging them with the skirt portion of such flange, circumferential tension of the belt will exert a comparatively small radial inward force on the mounting, which will press the ridge 21 against the body. Any suitable adjusting mechanism 30 may be provided to vary the circumferential length of the belt by which it can be adjusted to fit the individual wearer, and to alter to some extent the pressure of the ridge 21 against the patient's body.

Various types of construction might be employed to support the flange 21 from the belt 3, but preferably the structure employed will enable the mounting to be supported with its flange in any of various rotative positions about its axis. The reason for such adjustability is that the tube 2 is curved and the plane in which its arcuate axis is disposed in use should be upright, in order to guide the flow of excrement smoothly and consistently from an outward direction to a downward direction. A wide choice of angularly adjusted positions for the flange 20 may be afforded by providing around the periphery of the skirt portion of the flange a number of holes 22, adjacent holes being spaced apart approximately the width of the belt 3. Each of the belt ends, then, carries a pair of hooks 31 engageable in any pair of adjacent holes 22. It is preferred that an even number of holes be provided around the periphery of the flange 20, so that any pair of adjacent holes will lie diametrically across the flange from another such pair of holes. Such an arrangement will enable the ends of the belt 3 to be secured diametrically of the mounting in various angularly adjusted positions of the flange. In keeping with this principle, ten holes, as shown in Figure 2, may, for example, be provided.

It will be evident that where ten holes 22 are provided spaced equidistantly about the periphery of flange 20, so that the hooks 31 of each belt end may be engaged in any pair of adjacent holes, the rotational position of the flange may be adjusted by increments of 36 degrees, affording ten possible positions of adjustment, with the belt ends secured to the flange diametrically opposite each other. Consequently the flange may be adjusted so that the tube 2 integral with it will curve downward, whether the wearer is in a sitting posture or is reclining on either side.

With the tube 2 of the mounting disposed in the proper downwardly curved position for the particular posture of the wearer, the tube 1 hanging from the mounting must be secured to such mounting to convey the excrement from the lower end of tube 2. It is not necessary that this rigid tube curve through an angle of 90 degrees, and if the tube is of such angular extent it probably would be either too small in diameter or unnecessarily bulky. There should be no appreciable constriction from the end of tube 20 next to the body to its open lower end, nor in fact through the hanging tube 1. Moreover the rigid tube 2 should not be of smaller cross-sectional area than the area of the artificial body cavity. It is only necessary that the curvature of tube 2 be

sufficient in angular extent to prevent any constriction in the flexible tube 1 by reason of its upper or outer wall lying too close to the opposite side of the fitting duct. Preferably, however, the angle between the planes defined by the two ends of tube 2 will exceed 30 degrees.

In the preferred form of apparatus shown in the drawings the upper end of tube 1 has a bead 10, although such tube end may merely be rolled to form a thickened edge. It is not necessary, however, that the end be thickened at all. In any event such tube end is stretchable and is passed over and contracts upon a lip 23 encircling the end of tube 2 remote from flange 20. Preferably this tube end has a slight depression 24 immediately behind the lip in which the bead 10 may seat. Since there is no appreciable tension on tube 1 exerted lengthwise of it, such connection should be adequate to hold the flexible tube on the rigid tube while enabling these tubes to be disconnected readily.

In applying the apparatus, the belt 3 with the hooks 31 on one end disengaged from the flange 20 of the flexible tube mounting is placed about the user. The free hooks are then hooked into adjacent holes 22, the holes at diametrically opposite sides of the fitting selected being appropriate to dispose the axis of the bent tube 2 in an upright plane. The patient may then give himself an enema through the artificial body opening with the apparatus disposed about the body to locate the fitting just above such body opening. The fitting may then be slid downward to place the tube 2 in registry with the artificial colon opening, the ridge 21 being engaged uniformly with the body around such opening. The unsupported end of flexible tube 1 is then projected into the toilet if the user is seated, and if the patient is reclining, is placed in a bedpan.

Following evacuation the flexible tube 1 may be stripped with the fingers to squeeze any residue of excrement from it, and then one end of belt 3 may be unhooked and the apparatus removed from the body, a protective pad being placed over the artificial body cavity and secured in place by any suitable means. The other end of belt 3 may then be unhooked from the rigid mounting, and such mounting and the tube 1 rinsed out and disinfected. During such cleansing operation the tubes 1 and 2 may be disconnected, if desired. The cleaned apparatus may then be stored until it is to be used again.

I claim as my invention:

1. A colon evacuating apparatus fitting comprising a short, rigid tube, and a substantially rigid body-engaging flange integral with and substantially flush with one end of said tube with the axis of such tube in a plane substantially perpendicular to said flange, the face of said flange remote from the other end of said tube being convex and forming a rigid ridge portion adjacent to said tube for engaging securely a person's body with said tube in registry with an artificial colon opening and a skirt portion spaced a substantial distance from the person's body.

2. A colon evacuating apparatus fitting comprising a rigid tube curved lengthwise and having an opening of substantially uniform cross section therethrough, and a substantially rigid body-engaging flange integral with and substantially flush with one end of said tube with the axis of such tube in a plane substantially perpendicular to said flange, the face of said flange remote from the other end of said tube being convex and forming a rigid ridge portion adjacent

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to said tube for engaging a person's body with said tube in registry with an artificial colon opening and a skirt portion spaced a substantial distance from the person's body and said skirt portion having means at circumferentially spaced locations engageable to support the fitting with its flange in such relation to the person's body.

3. Colon evacuating apparatus comprising a short, rigid tube curved lengthwise and having therethrough an opening of substantially constant cross section throughout its length, a body-engaging flange carried by and substantially flush with one end of said tube with the axis of such tube in a plane substantially perpendicular to said flange, the face of said flange remote from the other end of said tube being convex and forming a ridge portion adjacent to said tube for engaging a person's body with said tube in registry with an artificial colon opening and a skirt portion spaced a substantial distance from the person's body, a relatively long, flexible, discharge tube carried by the other end of said rigid tube and having a substantially constant cross-sectional area throughout its length substantially equal to the cross-sectional area of said rigid

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tube, the end of said flexible tube remote from said rigid tube being open, a waist-encircling belt, and means operable to connect said belt to the skirt portion of said flange at substantially diametrically opposite locations selected from a plurality of possible locations, and operable to hold said flange ridge portion against a person's body with said rigid tube in registry with an artificial colon opening and curved therefrom in a direction selected from a plurality of possible directions curved relative to the body in which said rigid tube may be held by said belt connected to said flange.

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